**Supplementary Tables**

**Supplementary Table S1: List of differentially expressed genes in HNSCC cancer cells resistant to immune killing.** These genes were selected based on a *p*-value cut off <0.05. logFC, log fold-change; LR, likelihood ratio; FDR, false discovery rate.

**Supplementary Table S2: Demographic information of 195 human HNSCC tumor samples used in tissue microarray.** Patients demographic information is summarized in this table, including age, gender, clinical stage, HPV status, lymph node metastasis and distant metastasis.

**Supplementary Table S3: Statistical analysis of the efficacy of SatVax (Q19D; Q15L) as compared to mock, peptides, cGAMP or anti-PD-L1 treatment on tumor growth in Figure 6A.** A Generalized Estimating Equations model was employed to compare the growth curves among different treatment groups. The overall difference among groups is significant with a *p*-value <0.001. The *p*-values for multi-comparisons between any two groups are reported.

**Supplementary Table S4: Statistical analysis of the combinatorial efficacy of SatVax with anti-PD-L1 on tumor growth in Figure 6F.** A Generalized Estimating Equations model was employed to compare the growth curves among different treatment groups. The overall difference among groups is significant with a *p*-value <0.001. The *p*-values for multi-comparisons between any two groups are reported.

**Supplementary Table S2: Demographic information of 195 human HNSCC tumor samples used in tissue microarray.**

|  |  |  |
| --- | --- | --- |
| **Age** | **Category** | **Sample size (%)** |
| **<40** | 9 (5%) |
| **40-49** | 28 (14%) |
| **50-59** | 71 (36%) |
| **60-80** | 76 (39%) |
| **>80** | 11 (6%) |
| **Gender** | **Male** | 147 (75%) |
| **Female** | 48 (25%) |
| **Stage** | **Stage 0/1** | 20 (10%) |
|  | **Stage 2** | 20 (10%) |
|  | **Stage 3** | 29 (15%) |
|  | **Stage 4** | 126 (65%) |
| **HPV Status** | **Positive** | 60 (31%) |
|  | **Negative** | 114 (58%) |
|  | **Unknown** | 21 (11%) |
| **Nodal Status** | **Positive** | 110 (57%) |
|  | **Negative** | 82 (43%) |
| **Metastasis** | **Positive** | 5 (3%) |
|  | **Negative** | 187 (97%) |

**Supplementary Table S3: Statistical analysis of the efficacy of SatVax (Q19D; Q15L) as compared to mock, peptides, cGAMP or anti-PD-L1 treatment on tumor growth in Figure 6A.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ***p*-value** | **Mock** | **Peptides** | **cGAMP** | **anti-PD-L1**  | **SatVax** |
| **Mock** | 1 | 0.451 | 0.043 | 0.204 | <0.001 |
| **Peptides** | 0.451 | 1 | 0.0477 | 0.1095 | <0.001 |
| **cGAMP** | 0.043 | 0.0477 | 1 | 0.6294 | <0.001 |
| **Anti-PD-L1** | 0.204 | 0.1095 | 0.6294 | 1 | 0.0015 |
| **SatVax** | <0.001 | <0.001 | <0.001 | 0.0015 | 1 |

**Supplementary Table S4: Statistical analysis of the combinatorial efficacy of SatVax with anti-PD-L1 on tumor growth in Figure 6F.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ***p*-value** | **Mock** | **Anti-PD-L1** | **cGAMP** | **SatVax** | **Combination** |
| **Mock** | 1 | 0.027 | 0.911 | <0.001 | <0.001 |
| **Anti-PD-L1** | 0.027 | 1 | 0.0154 | 0.461 | 0.0076 |
| **cGAMP** | 0.911 | 0.0154 | 1 | <0.001 | <0.001 |
| **SatVax** | <0.001 | 0.461 | <0.001 | 1 | 0.0146 |
| **Combination** | <0.001 | 0.0076 | <0.001 | 0.0146 | 1 |